

## REMARKS

This is a Response to an Office Action dated February 1, 1999. In the Office Action, claims 1, 12-14 and 21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,005,265 to Verhoeckx et al. Claims 21-26, 1-6 and 12-15 stand rejected under § 103(a) as being unpatentable over U.S. Patent No. 4,847,829 to Thompkins et al.; and further, in view of Verhoeckx. Claims 28, 8 and 18 stand rejected under § 103(a) as being unpatentable over Thompkins, Verhoeckx and Ramanathan et al., and further in view of Rangan et al. Claims 29-31, 9-11 and 19-20 stand rejected under § 103(a) as being unpatentable over Thompkins, Verhoeckx and Ramanathan, and further in view of Stefik et al.

In response, certain Claims have been amended and Claims 6, 16 and 26 canceled.

Applicants respectfully request reconsideration in view of the above amendments and the arguments presented below.

### *Rejection of the Claims*

#### *Rejections Under 35 U.S.C. § 102(b)*

On pages 2-3 of the Office Action, the Examiner rejects claims 1, 12-14 and 21 under 35 U.S.C. § 102(b). More specifically, the Examiner states:

As per claim 1, Verhoeckx teaches a video communication system comprising:

- at least one analog video-signal source [abstract line 6];
- at least one video display device [apparent];
- at least one control communication component configured to produce digital control signals [abstract line 5 – signaling signals];
- an unshielded twisted pair of wires [telephone wire] defining a UTP communication path [col. 20 line 20+], arranged for video-signal transportation, wherein the system is configured to
  - multiplex analog video-signals originate at one of the video-signal sources with digital controls from the control communication component [lines 19-27 ‘via a single pair of cable’];
  - transmit the multiplexed signals along the UTP communication path to the at least one video display devices [apparent];
  - use the control signals to control reproduction of video images, based on the video signals, on the one of the video displays [col. 5 lines 17-35].

As per claims 12 and 21, they are rejected under similar rationale as for claim 1 above,

As per claims 13 and 14, Verhoeckx teaches multiplexing the audio and switching signal onto the UTP communication path [col. 3 lines 19-27].

Applicants have amended the claims and submit that, for at least the two reasons given below, Verhoeckx does not anticipate the claims as amended.

First, independent claims 1, 12 and 21 include the limitation to a “*computer network*.” By contrast, Verhoeckx discloses only a videophone system, wherein signals are transmitted over an existing *telephone* network. Thus, Verhoeckx does *not* disclose a *computer-networked* system.

Second, independent claims 1, 12 and 21 are further limited to the “video images” being reproduced (L) in “color” and (ii) at “greater than 20 frames per second.”

It is conceded that Verhoeckx discloses both color and 20 frames per second. But, it does so totally independently and it does not (indeed cannot) describe the *combination* of color video at 20 plus frames per second. Verhoeckx describes video display at greater than 20 frames per second. (Col. 7 lines 32 and 33.) Also, Verhoeckx separately discloses the reproduction of colored signals (Col. 3, lines 9-11 and Col. 9 line 69). But Verhoeckx does not disclose *both* color *and* 20 plus frames per second together in a *single implementation*, in fact, it is not possible.

The Verhoeckx technology cannot generate 20 frames per second of color video, (a claim limitation). This is because the telephone-based system of Verhoeckx is bandwidth-limited to 1MHz. (Col. 1, lines 24-29 and Col. 4, lines 35-41). This limited (1MHz) bandwidth cannot support color video at 20 frames per second. For example, and as proof, all three television standards – NTSC, PAL and SECAM – require bandwidths of at least 3.5 MHz or more to operate effectively. (See attached copies from the “Television engineering handbook”, McGraw-Hill, 1986.) Thus Verhoeckx teaches black and white display at 20 frames per second but not both color and 20+ frames per second together.

For the foregoing reasons, Applicants respectfully submit that Verhoeckx does not anticipate independent claims 1, 12 and 21 of the present application. Also, for reasons set out below, Applicants submit that independent claims 1, 12 and 21 are non-obvious in light of the prior art cited and, accordingly, are in a condition for allowance.

#### *Rejections Under 35 U.S.C. § 103(a)*

On pages 3-6 of the Office Action, the Examiner rejects claims 21-26, 1-6 and 12-15 under 35 U.S.C. § 103(a). More specifically, the Examiner states:

As per claim 21, Thompson teaches  
A video communication system for operation with an infrastructure including

at least one analog video-signal source [fig. 2 camera];  
at least one video display device [fig. 2 view finder 14]; and  
coaxial wire defining a communication path arranged for video signal transportation  
[col. 3 lines 10-20],

the system comprising:

(a) at least one control communication component [col. 2 line 67 'controller']  
configured to, produce digital control-signals [line 57, 68 'data communication']; and  
wherein the system is configured to

- (i) multiplex [col. 3 lines 10-28]
  - (1) analog video-signals,  
originating at a video-signal source,
  - (2) with digital control-signals from one of the control  
communication components,
- (ii) transmit the multiplexed signals
  - (1) along the communication path;
  - (2) to at least one of the video display devices;

Thompkins does not specifically teach using twisted pair communication path for transmission of the video. Thompkins preferred embodiment uses coaxial cable [col. 3 lines 10-20]. Verhoeckx teaches transmission of video signal over existing twisted pair wire to save cost [col. 1 lines 20-25]. Hence, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teaching of Verhoeckx with Thompkins to enable transmission of video conference signal over twisted pair instead of coaxial cable because it would have reduces cost. Verhoeckx teaches using digital control signal to control reproduction of video images at one of the video display devices [Verhoeckx col.3 lines 18-27].

As per claim 22, Thompkins teaches multiplexing analog audio onto the communication path [col.3 lines 10-20].

As per claim 23, Thompkins teaches controlling a switch to route the multiplexed signal along the communication path [col.3 lines 29-42].

As claim 24, Thompkins teaches a server controlling the per switch [col.3 lines 29-42 "network master"].

As per claim 25, it is inherent in the operation of Thompkins teaching that audio/video from a first station is configured to reproduce at a second workstation.

As per claim 26, Thompkins teaching using NTSC format. Hence it is apparent that the frames rate is greater than 20 frame/sec. Verhoeckx teaches the video images is reproduced at greater than 20 frames per second [col.7 line 32: 25Hz]. Hence, the system as modified in claim 21 would have greater than 25 frames per second.

As per claims 1-6, and 12-16, they are rejected under similar rationale as for claims 1-6 above.

Applicants respectfully disagree with these rejections, and more specifically, that it is obvious to combine Verhoeckx with Thompkins. As apparent from the claims, the invention is limited to a UTP-based and computer-based video conferencing system that can reproduce color video images greater than 20 frames per second. As explained more fully below, the references can not expressly or impliedly teach or suggest this.

The M.P.E.P. directs that "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the

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knowledge generally available to one of ordinary skill in the art.”<sup>1</sup> Moreover, the M.P.E.P. also directs that “If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification”<sup>2</sup>

The Examiner, has attempted to meet the M.P.E.P. burden to provide a line of reasoning for demonstrating a teaching or suggestion to combine/modify Thompkins with Verhoeckx. He reasons that, because Verhoeckx “teaches transmission of video signal [s] over existing twisted pair to save cost,” it “would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teaching of Verhoeckx with Thompkins to enable transmission of video conference signal[s] over twisted pair instead of coaxial cable because it would have reduce[d] cost.”

Applicants respectfully disagree. As explained above, Verhoeckx discloses a videophone system, utilizing an existing UTP-based public telephone network. Thompkins, by contrast, discloses a computer-based video conferencing network using coaxial cables. The only similarity, therefore, is that these are both video conferencing references. But that does not make it obvious to combine them, particularly in view of the fact that using the Verhoeckx public telephone lines in combination with or as a modification of the Thompkins system would probably render the Thompkins system inoperable and definitely unsatisfactory for its intended purpose, due, in part, to Thompkins bandwidth requirements versus Verhoeckx bandwidth limitations.

Specially, Thompkins provides a system that is coaxial cable based. This coaxial cable has, according to Thompkin’s own teachings, the high bandwidth capability required for the transmission spectrum shown in Figure 5. In this figure the frequency ranges center around 30, 70 and 170 MHz. It is simply not possible to have these frequency ranges on the 1MHz system of Verhoeckx.

Moreover, Thompkins itself teaches away from a Verhoeckx system by (i) differentiating over Verhoeckx type systems and (ii) specifically calling out the problems associated with low

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<sup>1</sup> Section 2143.01 of the M.P.E.P. (Seventh Edition, July 1998) (citing, *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984).)

<sup>2</sup> M.P.E.P. § 2143.01 (Seventh Edition, July 1998) (citing *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992).)

frame rate (for color) systems. As clearly explained in Tomkins at Col. 1, lines 22 to 34 "Video communication has evolved over the years from a simple video telephone concept to a sophisticated network for allowing multiple parties to enter into a video conference. A number of factors have prevented total success of such prior video systems, including public acceptance, excessive cost, system complexity and inadequate video quality. Although these factors can be manipulated somewhat to provide an improved system for video communications, inherent constraints such as standardized video formats and presently existing communications systems minimize the design flexibility which may be utilized in achieving a feasible system."

Also, directly below this quoted section, Thompkins goes on to state "[t]he transmission of full motion color video normally requires much greater bandwidth than the transmission of facsimile data." Col. 1, lines 45-47.

Thus, not only is a Thompkins/Verhoeckx combination technically incompatible and/or inoperable, but Thompkins, on its face, teaches away from under combination. Both facts imply non-obviousness of combination.

For the foregoing reasons, Applicants respectfully believe that the Examiner has made a combination of references that cannot support the obviousness rejections. The Thompkins system, whether combined with or modified by Verhoeckx, does not render obvious the invention claimed in independent claims 1, 12 and 21 of the present application. Accordingly, Applicants believe that independent claims 1, 12 and 21 are in a condition for allowance and request that the Examiner withdraw the rejections of these claims. Additionally, since all the other claims of the present application depend from one of these three independent claims, the dependent claims should also be in a condition for allowance. Accordingly, Applicants request that the Examiner also withdraw the rejections of these dependent claims.

On page 6 of the Office Action, the Examiner also rejects claims 27, 7 and 17 under 35 U.S.C. § 103(a). On pages 6-7 of the Office Action, the Examiner also rejects claims 28, 8 and 18 under 35 U.S.C. § 103(a). Finally, on pages 7-8 of the Office Action, the Examiner rejects claims 29-31, 9-11 and 19-20, under § 103(a). Each of these claims depend from one of the three independent claims 1, 12 or 21. Consequently, as Applicants believe the independent claims are in a condition for allowance (as argued above in relation to the § 102 and § 103(a) rejections of those claims) so to should these dependent claims. Accordingly, Applicants respectfully request that the Examiner withdraw the § 103 rejections of these dependent claims.

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**CONCLUSION**

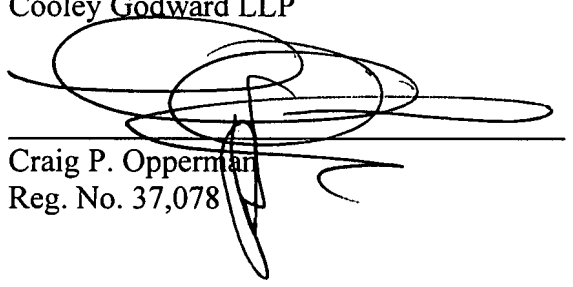
In conclusion, for the reasons provided above, Applicants respectfully believe that independent claims 1, 12 and 21 are in a condition for allowance. Dependent claims 2-5 and 7-11, which depend from claim 1; dependent claims 13-15 and 17-20, which depend from claim 12; and claims 22-25 and 27-31, which depend from claim 21 are also believed to be allowable since they depend from allowable base claims.

Allowance at an early date would be appreciated.

Should the Examiner have any questions or comments, he is encouraged to call the undersigned to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,

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